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ABSTRACT

If multimedia technology is to be successfully employed to enhance classroom instruction and learning, the full capabilities of the technology must be used. The complete power of multimedia includes high quality graphics and images, sophisticated navigational techniques and transitional effects, appropriate music and sound, animation, and, increasingly, 3-D modeling and virtual reality. Two multimedia-based software tools to enhance MIS (Management Information Systems) and higher education in general were developed by faculty at the MIS program in the College of Business Administration at Tennessee Technological University. "The Interactive Presentor" is a multimedia classroom software program designed to provide a high level of interaction between instructor and students within the context of a multimedia presentation. "The Intelligent Tutor" is a CD-ROM supplement to a MIS course textbook which incorporates artificial intelligence with multimedia to provide students with a personal tutor and progress tracking capability, in addition to a virtual classroom environment. (Author/SWC)

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ENHANCING TEACHING AND LEARNING IN HIGHER EDUCATION WITH A TOTAL MULTIMEDIA APPROACH

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Multimedia technology has been employed to augment classroom instruction for several years. Some initial success has been dampened as students find that very often multimedia presentations are no more than glorified transparency-based presentations. If multimedia technology is to be successfully employed to enhance classroom instruction and learning, the full capabilities of the technology must be used. The complete power of multimedia includes high quality graphics and images, sophisticated navigational techniques and transitional effects, appropriate music and sound, animation and, increasingly, 3-D modeling and virtual reality.

An ancient Chinese proverb states:

> "If you tell me I'll forget,
> if you show me I'll remember,
> if you involve me I'll learn."

Classroom interaction between instructor and students can be linked to this proverb as follows: lecture me and I'll forget, use multimedia technology in the "glorified transparency mode" and I'll remember, employ the full features of multimedia technology in the classroom and I'll learn. Since the de facto goal of the classroom process is for the instructor to teach, and for the student to learn, it stands to reason multimedia capabilities which enhance the teaching and learning process should be used.

The MIS (Management Information Systems) program in the College of Business Administration at Tennessee Technological University has been using multimedia in the classroom for several years. Faculty members, having experienced the multimedia learning curve, are engaged in a research and development activity the purpose of which is to enhance MIS education. Another goal of the research is to produce tools and methodologies which have general applicability to higher education.

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Software authoring tools such as Macromedia's Director and Oracle's OMO have been used to create multimedia software which can be employed in the classroom and by the student in the one-on-one tutorial session mode. The classroom software, designated The Interactive Presentor, has been designed for the entry level MIS course required of all College of Business students and has been tested in the classroom and at professional meetings. The primary goal of the prototype software is to provide a high level of interaction between instructor and students within the context of multimedia presentation employ the full power of multimedia technology. Periodically, questions are displayed on the screen, and the instructor queries students for a response. Based on student response, the navigational stream of the software takes the audience to an appropriate visual and audio feedback segment of the presentation. The software is designed to be user-friendly, interactive, and instructional. Presentations to date have validated that research goals have been met.

A second multimedia-based software tool prototype is being developed. This software would reside on a CD-ROM and would supplement the course (MIS) textbook. This software, called The Intelligent Tutor, is artificial intelligence as well as multimedia-based. Students using The Intelligent Tutor would have a personal tutor and progress tracking capability as expert systems software is integrated into the interactive process. The software also creates a virtual classroom environment which can be viewed as the teaching-learning environment of the future.

Feedback has been very positive on the two multimedia-based software tools developed. Students, and audiences in general, enjoy what is being presented and are eager to participate in in the process. And as the ancient Chinese proverb states, "If you involve me I'll learn."